

REMARKS / ARGUMENTS

The action by the Examiner in this application, together with the references cited by him has been given careful consideration. Following such consideration, claims 3 and 14 have been canceled, and claims 1, 2, 4, 5, 9, 11 and 15-17 have been amended to define more clearly the patentable invention Applicant believes is disclosed herein. It is respectfully requested that the Examiner reconsider the claims in their present form, together with the following comments, and allow the application.

As the Examiner well knows, the present invention relates to a starter set of refractory components for starting a spiral brick lining in a ladle used for handling molten metal. A problem with conventional starter sets known heretofore is that they form a generally linear ramp. Although helical in shape, the ramp has an upper surface that defines a generally straight slope. As a result, bricks stacked onto such a ramp meet a row of horizontal bricks at an angle, thereby creating a "hump" in the lining. Subsequent layers of brick exaggerate the hump thereby producing a significant crack or gap in the lining, as pictorially illustrated in FIG. 2 of the present application.

The present invention overcomes this and other problems and provides a starter set of refractory components that defines an upper ramp surface that is upwardly bowed or slightly arched between the leading end and trailing end of the ramp such that refractory bricks stacked on the trailing end of the starter set are nearly or substantially horizontal. By arching the upper surface of the starter set, the refractory bricks stacked thereon more uniformly abut with the refractory bricks forming the next course of the lining. This contour eliminates the "crack" or

“gap” produced by starter sets known heretofore. It is respectfully submitted that none of the cited references alone or together teaches, suggests or shows a starter set as presently claimed.

In response to the Examiner’s objection, claims 1, 11 and 17 have been amended to indicate that the upper surface of the starter set is “upwardly bowed” or “slightly arched” such that the refractory bricks stacked on the starter set are “nearly horizontal” or “substantially horizontal” at the trailing end of the starter set. Support for such limitations can be found in paragraph [0031], [0035], [0037] and [0041]. Claims 1 and 2 have also been amended to overcome the antecedent basis problem noted by the Examiner.

The claims stand rejected under 35 U.S.C. Section 102(b) as being anticipated by U.S. Patent Nos. 5,824,263 to Erny et al. and 5,882,583 to Erny. It is respectfully submitted that both of the cited references refer to precast modular refractory leveling assemblies to compensate for a sloping bottom wall in a metallurgical vessel. In this respect, neither reference teaches, suggests, or shows a starter set for starting a spiral brick lining in a ladle. Moreover, the cited references do not teach a set of refractory components wherein the upper surface of the set is “slightly arched” or “upwardly bowed” between the leading end and trailing end of the set. In this respect, they do not teach, suggest or show a starter set for starting a spiral brick lining, and further do not teach, suggest or show the advantage of arching the upper surface of such a starter set such that the bricks at the trailing end are generally horizontal and substantially coplanar with the next course of lining bricks so as to avoid any “cracks” or “gaps” being formed in the lining as would result in a conventionally known starter set.

Application No. 10/699,535
Amendment dated July 25, 2005
RESPONSE TO OFFICE ACTION dated May 10, 2005

Claims 17-22 stand rejected under 35 U.S.C. Section 102(b) as being anticipated by U.S. Patent No. 3,851,772 to Williamson et al. The '772 patent discloses a tapered starter set to provide that the working lining 28 is built up by spiraling courses. There is nothing in the '772 patent that teaches, suggests or shows a starter set having an arched or upwardly bowed upper surface wherein the refractory brick(s) stacked on the trailing end of the starter set are near horizontal or substantially horizontal. In this respect, the '772 patent does not teach, suggest or show a starter set as presently claimed.

It is respectfully submitted that the claims in their present form define a starter set unlike those known in the prior art. It is believed that the claims in their present form are distinguishable from the cited references, and favorable action is therefore respectfully requested.

Respectfully submitted,



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I hereby certify that this correspondence (along with any paper referenced as being attached or enclosed) is being deposited on the below date with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to MAIL STOP AMENDMENT, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

Date: July 25, 2005



Christine Goellner